Attorney Docket Number P-71659-US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	OZ, Ran M. et al.	Examiner:	SAINT CYR, Jean D.
Serial No.:	10/698,189	Group Art Unit:	2425
Filed:	October 30, 2003	Confirmation No.:	9908
Title:	SYSTEM AND METHOD FOR PROVIDING MEDIA STREAM RELATED APPLICATIONS		

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APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VA 22313
BOARD OF PATENT APPEALS & INTERFERENCES:

Appellants file this appeal brief with the Board of Appeals and Interferences regarding the appeal of the rejected claims in the above-referenced patent application.

TABLE OF CONTENT

REAL PARTY IN INTEREST

The present application is wholly owned by Bigband Networks, Inc. of Redwood city, California.

RELATED APPEALS AND INTERFERENCES

Appellant is unaware of other appeals or interferences which will directly affect, be directly affected by, or have a bearing on the Board's decision in this appeal.

STATUS OF CLAIMS

Claims 1, 3-9 and 11-28 are pending.

Claims 1, 3-9 and 11-28 have been rejected.

This application was filed on 10/30/2003, and included claims 1-19.

On August 29 2007 a Non-Final Office Action was mailed and rejected all claims.

On July 18 2008 a response was filed, claims 1, 3, 9, 11, 12, 16, 17, 19 were amended and claims 20-27 were added.

On March 12 2009 a Final Office Action was mailed and rejected all claims.

On April 2 2009 a request for continued examination (RCE) was filed and claims 1, 4, 9, 16 and 19 were amended.

On May 25 2009 a Non-Final Office Action was mailed and rejected all claims.

On August 26 2009 a response was filed, claims 1, 9 and 19 were amended and claims 2 and 10 were cancelled.

On December 8 2009 a Non Final Office Action was mailed and rejected all claims.

On April 7 2010 a response was filed.

On June 29 2010 a Final Office Action was mailed and rejected all claims.

On September 7 2009 a request for continued examination (RCE) was filed and claims 1, 9 and 19 were amended.

On November 10 2010 a Non Final Office Action was mailed and rejected all claims.

On March 18 2010 a response was filed, claims 1, 3, 5-6, 8, 11-14 and 16-18 have been amended and new claim 28 was added.

On May 9 2011 a Final Office Action was mailed by the United States Patent and Trademark Office. All claims were rejected.

Claims 1, 3-9, 11-21, 23-25 and 27-28 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over Dygart (US patent 6954469) in view of Weaver (US patent 6119154.)

The rejection of claims 1, 3, 5, 6, 8, 9, 11, 13, 14, 16, 17, 18 and 19 is being appealed.

STATUS OF AMENDMENTS

This application was filed on 10/30/2003, and included claims 1-19.

On July 18 2008 a response was filed, claims 1, 3, 9, 11, 12, 16, 17, 19 were amended and claims 20-27 were added.

On April 2 2009 a request for continued examination (RCE) was filed and claims 1, 4, 9, 16 and 19 were amended.

On August 26 2009 a response was filed, claims 1, 9 and 19 were amended and claims 2 and 10 were cancelled.

On September 7 2009 a request for continued examination (RCE) was filed and claims 1, 9 and 19 were amended.

On March 18 2010 a response was filed, claims 1, 3, 5-6, 8, 11-14 and 16-18 have been amended and new claim 28 was added.

All amendments were entered.

The claims appendix reflects the amendments entered by the examiner.

SUMMARY OF CLAIMED SUBJECT MATTER

There is a growing need to provide efficient manners for providing live media streams and non-live media streams to users.

The current application addresses a bottleneck between the video pump and a server that provides to the video pump a live stream and reduces the load over that network by providing only once a live stream to the video pump that in turn provides the live stream to multiple users (page 10, lines 1-30).

The current application simplifies the generation and provision of trick media streams by using intra-coded frames and duplicating frames and allowing an alteration of timing information of these frames.

Claim 1 (page 5, lines 5-7; page 7, lines 11-21; page 8, lines 10-26; page 13 lines 1-10; figures 2C, 2D, 3A and 4) reads as follows:

A method for providing media streams, the method comprising the steps of: receiving live media streams at a first path, wherein the first path comprises a video pump coupled to a data acquisition unit; providing a live media stream from the first path to a client, in response to a request to provide the live media stream to the client; retrieving media related information that comprises data structures that assist in constructing non-live media streams; online generating by the video pump, in response to a request to receive a trick play media stream, a non-live media stream, by utilizing the media related information, wherein the generating comprises fetching intra-coded frames from locations that are pointed to at the media related information, and altering timing information of the intra-coded frames and of duplicating frames; and providing the non-live media stream from a second path to the client, wherein the second path comprises the video pump and a media server being coupled to each other by a network link that differs from a network link of the first path.

Claim 3 (page 10, lines 8-26) reads as follows:

The method of claim 1 comprising providing the live media stream to multiple users wherein the live media stream reaches the video pump only once.

Claim 5 (page 12, lines 27-35, page 13, lines 11-26) reads as follows:

The method of claim 1 wherein the data structures comprise an indexing file that comprises a duplicating frame and locations of the intra-coded frames.

Claim 6 (figures 2C and 2D) reads as follows:

The method of claim 1 wherein the non-live media stream is a trick mode media stream and wherein the non-live media stream consists essentially of the intra-coded frames and the duplicating frames.

Claim 8 (Page 13, lines 27-30) reads as follows:

The method of claim 1 wherein an amount of duplicating frames to be transmitted between each pair of intra-coded frames determines a presentation rate of the non-live media stream.

Claim 9 (page 5, lines 1-31; page 7, lines 11-21; page 8, lines 10-26; page 10, lines 7-30, page 13 lines 1-10; figures 2C, 2D, 3A and 4) reads as follows:

A system for providing media streams, the system comprising:
a first path comprising a video pump coupled to a data acquisition unit; wherein the first path is utilized for receiving live media streams and for providing a live media stream to a client, in response to a request to provide the live media stream to the client; and
a second path comprising the video pump and a media server being coupled to each other by a network link that differs from a network link of the first path; wherein the second path is operable to retrieve media related information that comprises data structures that assist in constructing non-live media streams; to online generate at least a portion of a non-live media stream in response to a request to provide the non-live media stream to the client, by utilizing the media related information, wherein the generating comprises fetching intra-coded frames from locations that are pointed to at the media related information, and altering timing information of the intra-coded frames and of duplicating frames; and to provide the non-live media stream to the client, in response to the request to provide the non-live media stream to the client.

Claim 11 (page 10, lines 8-26) reads as follows:

The system of claim 9 wherein the video pump is arranged to provide the live media stream to multiple users wherein the live media stream reaches the video pump only once.

Claim 13 (page 12, lines 27-35, page 13, lines 11-26) reads as follows:

The system of claim 9 wherein the data structures comprise an indexing file that comprises a duplicating frame and locations of the intra-coded frames.

Claim 14 (figures 2C and 2D) reads as follows:

The system of claim 9 wherein and wherein the non-live media stream consists essentially of the intra-coded frames and the duplicating frames.

Claim 16 (page 5, lines 1-31; page 7, lines 11-21; page 8, lines 10-26; page 10, lines 7-30, page 13 lines 1-10; figures 2C, 2D, 3A and 4) reads as follows:

A system for providing media streams, the system comprising: an acquisition unit coupled to a media source; a media storage and management entity; a video pump interface, coupled to the output of the acquisition unit via a first path, to the media storage and management entity via a second path and to a command channel, the video pump interface is operable to receive instructions/ requests from an end-user and accordingly to determine whether to feed the video pump with live stream media from the acquisition unit via the first path or to initiate a data fetch sequence for fetching data stored in the media storage and management entity, via the second path, in case where trick modes are required; wherein the second path comprises a network link that differs from a network link of the first path; and

a video pump that is operable to determine which data to fetch from the media storage and management entity and when to transmit it according to MPEG timing; wherein the video pump is arranged to provide the live media stream to multiple users wherein the live media stream reaches the video pump only once;

wherein the media storage and management entity is adapted to generate at least a portion of a non-live media stream in response to a request to provide the non-live media stream to a client.

Claim 17 (page 5, lines 1-31; page 7, lines 11-21; page 8, lines 10-26; page 10, lines 7-30, page 13 lines 1-10; figures 2C, 2D, 3A and 4) reads as follows:

The system of claim 16 wherein the video pump is operable to fetch selected portions of the data stored at the media storage and management entity, wherein video pump is arranged to fetch selected portions based on an indexing file that comprises a duplicating frame and locations of the intra-coded frames .

Claim 18 (page 13, lines 27-30; figures 2C and 2D) reads as follows:

The system of claim 16 wherein an amount of duplicating frames to be transmitted between each pair of intra-coded frames determines a presentation rate of the non-live media stream.

Claim 19 (page 5, lines 1-31; page 7, lines 11-21; page 8, lines 10-26; page 10, lines 7-30, page 13 lines 1-10; figures 2C, 2D, 3A and 4) reads as follows:

A non-transitory computer readable medium having code embodied therein for causing an electronic device to perform the steps of: receiving live media streams at a first path, wherein the first path comprises a video pump coupled to a data acquisition unit; providing a live media stream from the first path to a client, in response to a request to provide the live media stream to the client; retrieving media related information that comprises data structures that assist in constructing non-live media streams; online generating by the video pump, in response to a request to receive a trick play media stream, a non-live media stream, by utilizing the media related information, wherein the generating comprises fetching intra-coded frames from locations that are pointed to at the media related information, and altering timing information of the intra-coded frames and of duplicating frames; and providing the non-live media stream from a second path to the client, wherein the second path comprises the video pump and a media server being coupled to each other by a network link that differs from a network link of the first path.

GROUNDS FOR REJECTION TO BE REVIEWED ON APPEAL

1) Are claims 1, 9 and 19 patentable under 35 U.S.C. §103(a), over Dygart in view of Weaver?
2) Are claims 3, 11 and 16 patentable under 35 U.S.C. §103(a), over Dygart in view of Weaver?
3) Are claims 5, 13 and 17 patentable under 35 U.S.C. §103(a), over Dygart in view of Weaver?
4) Are claims 6 and 14 patentable under 35 U.S.C. §103(a), over Dygart in view of Weaver?
5) Are claims 8 and 18 patentable under 35 U.S.C. §103(a), over Dygart in view of Weaver?

ARGUMENTS FOR GROUND 1

Claims 1, 9 and 19

Dygart

The Appellants argue that Dygart teaches of a system that includes a video pump that may stream recorded video from storage (abstract). The video pump does not stream live video but rather non-live video recorded at a storage device (Abstract; column 3, lines 49-61).

It is noted that the only reference to live streaming of Dygart is made in the background section of Dygart – and in order to distinguish between streaming live video and streaming recorded video from storage (column 1, lines 39-47).

Dygart does not teach or suggest duplicating frames. Dygart merely refers to frames in relation to bit rate constraints or size constraints alone (see for example column 1, lines 48-50; column 2, lines 45-65; column5, lines 25-35).

Thus- Dygart does not teach or suggest "*receiving live media streams at a first path, wherein the first path comprises a video pump coupled to a data acquisition unit; providing a live media stream from the first path to a client, in response to a request to provide the live media stream to the client*" – as recited in claim 1.

In addition - The Examiner admitted that Dygart does explicitly discloses "*generating comprises fetching intra-coded frames from locations that are pointed to at the media related information, and altering timing information of the intra-coded frames and of duplicating frames*" – as recited in claim 1.

Accordingly – Dygart does not teach or suggest all the limitations of claim 1.

Weaver

The Examiner argued that Weaver teaches of "*generating comprises fetching intra-coded frames from locations that are pointed to at the media related information, and altering timing information of the intra-coded frames and of duplicating frames".*

The Examiner argues that "duplicating frames" appear when a request for fast forward and fast rewind is send and without duplicating frames users will be unable to read anything during fast forward and fast rewind.

The appellants argue that Weaver does not teach or duplicating frames, that the statement of the examiner about the presence of duplicating frames in fast forward and fast backward is not based upon Weaver and is a mere presumption raised by the Examiner without proper basis.

Weaver teaches of various specific types of packets and data such as prefix data and padding packets but both differ from duplicating frames. Prefix data merely includes appropriate header information that is transmitted by the video pump prior to transmitting data from the new position (column 14, lines 21-26). Padding packets are non-video packets that are added to video packets to comply with transport packet requirements. See, for example, box 255 of figure 2A and Table 3, column 9: *"# OF NON-VIDEO PACKETS The number of non-video packets 222 (i.e. audio packets, padding packets, control packets and timing packets) that are located within the picture packet for frame "F""*.

Weaver teaches of performing fast forward and fast rewind by skipping some frames of the original (Stored) video stream but does not teach or suggest duplicating frames (see, for example, column 1, lines 45- 58 and column 11, lines 18-27):

Various approaches have been developed to provide non-sequential playback of digital video data. With respect to digital video data, non-sequential playback refers to any playback operation that does not play all of the encoded frames in the exact order in the sequence in which they were encoded. For example, jump ahead and fast forward operations are non-sequential in that some frames are skipped. Rewind operations at any speed are non-sequential in that during a rewind operation, frames are not played in the sequence in which they are encoded.

During normal playback operations, there is sufficient time to perform the disk accesses required to read an entire section while the data from the previous section is being transmitted in the MPEG data stream. However, during fast forward and fast rewind operations, less than all of the data in any section will be sent in the MPEG data stream. Because less data is sent, the transmission of the data will take less time. Consequently, less time will be available to read and process the subsequent section.

For example, assume that only one frame X from section 350 was selected for display during a fast forward operation. During the time it takes to transmit the segment for frame X, the data for the next selected frame Y is read and processed. Assume that the next frame Y is located in section 352. If the MPEG file is read and processed on a section by section basis (required for RAID), then all of the blocks in section 352 are read and processed during the transmission of the single frame X. Even if it were possible to read and process all of the blocks in section 352 in the allotted time, it may still be undesirable to do so because of the resources that would be consumed in performing the requisite disk accesses.

In light of the foregoing, video pump 120 does not use RAID during fast forward and fast rewind operations. Rather, video pump 120 reads, processes and transmits only the data indicated in the commands it receives from the stream server 118. Thus, in the example given above, only the frame data for frame Y would be read an d processed during the transmission of the segment for frame X. By bypassing RAID during fast forward and fast rewind operations, disk bandwidth remains at the same level or below that used during normal playback operations.

The appellants will argue that it is known in the art that non-sequential retrieving of frames consists of retrieving only intra-coded frames (as they can be independently decodable) and that the fast forward and fast backward streams of Weaver includes only intra-coded frames – and that Weaver does not include *fetching intra-coded frames from locations that are pointed to at the media related information, and altering timing information of the intra-coded frames and of duplicating frames*.

Accordingly – Weaver does not teach or suggest all the limitations of claim 1.

Conclusion

Neither one of Dygart or Weaver, alone or in cousin, teaches all the features of claim 1 and for that reason alone the 35 U.S.C. § 103(a) rejection of claim 1 is traversed and claim 1 should be allowed.

Claims 3-8, 20-23 and 28 depend, directly or indirectly, on claim 1 and include of all of its features. For this reason alone the 35 U.S.C. § 103(a) rejection of claims 3-8, 20-23 and 28 is traversed and claims 3-8, 20-23 and 28 should be allowed.

Claim 9 differs from claim 1 but the arguments applied to the rejection of claim 1 should be applied to the rejection of claim 9. Thus - Neither one of Dygart or Weaver, alone or in cousin, teaches all the features of claim 9 and for that reason alone the 35 U.S.C. § 103(a) rejection of claim 9 is traversed and claim 9 should be allowed.

Claims 11-15 and 24-25 depend, directly or indirectly, on claim 9 and include of all of its features. For this reason alone the 35 U.S.C. § 103(a) rejection of claims 11-15 and 24-25 is traversed and claims 11-15 and 24-25 should be allowed.

Claim 19 differs from claim 1 but the arguments applied to the rejection of claim 1 should be applied to the rejection of claim 19. Thus - Neither one of Dygart or Weaver, alone or in cousin, teaches all the features of claim 19 and for that reason alone the 35 U.S.C. § 103(a) rejection of claim 19 is traversed and claim 19 should be allowed.

ARGUMENTS FOR GROUND 2

Claims 3, 11 and 16

Neither one of Dygart or Weaver, alone or in cousin, teaches of "*providing the live media stream to multiple users wherein the live media stream reaches the video pump only once*" – as recited in claim 3.

The current application addresses a bottleneck between the video pump and a server that provides to the video pump a live stream and reduces the load over that network by providing only once a live stream to the video pump that in turn provides the live stream to multiple users (paragraph [0038] – [0040] of the current application).

Dygart does not teach or suggest such limitation. It teaches of a video pump that can access a RAID array or a DVD jukebox – and retrieve stored (non-live) data for each channel at a specified rate (column 7, lines 5-8). Furthermore, Dygart does not teach or suggest live media but rather teaches of providing recorded signals for playback (Abstract; column 5, lines 43-47 and column 10, lines 60-65). Furthermore - the only reference to live streaming of Dygart is made in the background section of Dygart – and in order to distinguish between streaming live video and streaming recorded video from storage (column 1, lines 39-47).

Weaver does not discuss multiple requests from different clients to receive multiple live streams.

Therefore - neither one of Dygart or Weaver, alone or in cousin, teaches all the features of claims 3 and for that reason alone the 35 U.S.C. § 103(a) rejection of claim 3 is traversed and claim 3 should be allowed.

Claim 11 differs from claim 3 but the arguments applied to the rejection of claim 3 should be applied to the rejection of claim 11. Thus - Neither one of Dygart or Weaver, alone or in cousin, teaches all the features of claim 11 and for that reason alone the 35 U.S.C. § 103(a) rejection of claim 11 is traversed and claim 11 should be allowed.

Claim 16 differs from claim 3 but the arguments applied to the rejection of claim 3 should be applied to the rejection of claim 16. Thus - Neither one of Dygart or Weaver, alone or in cousin, teaches all the features of claim 16 and for that reason alone the 35 U.S.C. § 103(a) rejection of claim 16 is traversed and claim 16 should be allowed.

ARGUMENTS FOR GROUND 3

Claims 5, 13 and 17

Neither one of Dygart or Weaver, alone or in cousin, teaches of "*an indexing file that comprises a duplicating frame and locations of the intra-coded frames*-" – as recited in claims 5, 13 and 17.

The current application provides a highly efficient retrieval scheme that provides an indexing file that includes a (concise) duplicating frame and location of intra-coded frames. This indexing file reduces the amount of data retrievals as a trick play stream can be generated by fetching the indexing file and intra-coded frames, without fetching additional duplicating frames (as they are included in the indexing file itself).

Dygart does not teach of an indexing frame and in general does not discuss how the video pump performs trick plays (Column 6, lines 6-19).

Weaver teaches of a complete separation between video files and tag data (figure 1, column 6, lines 5-13 and 17-40, column 6 line 55 – column 7, line 60 "EXEMPLARY MPEG FILE", and column 7, line 70 - column 10, line 40 "EXEMPLARY TAG FILE"). Weaver even suggests delaying the provision of control information (including tag data) to an MDS server to ensure that the video files referred to by the video files already exits (column 6, lines 40-53). The tag file of Weaver includes only metadata relating to the video file but does not include a duplicating frame (column 7, line 70 - column 10, line 40 "EXEMPLARY TAG FILE"). Weaver does not even discuss duplicating frames.

Therefore - neither one of Dygart or Weaver, alone or in cousin, teaches all the features of claims 5, 13 and 17 and for that reason alone the 35 U.S.C. § 103(a) rejection of claims 5, 13 and 17 is traversed and claims 5, 13 and 17 should be allowed.

ARGUMENTS FOR GROUND 4

Claims 6 and 14

Neither one of Dygart or Weaver, alone or in cousin, teaches of "*the non-live media stream consist essentially of the intra-coded frames and the duplicating frames*" – as recited in claims 6 and 14.

The current application provides a non-live media stream that consists essentially of intra-coded frames and duplicating frames.

Neither one of Dygart and Weaver teaches or suggests of duplicating frames and especially does not teach or suggest of a non-live media stream that consists essentially of the intra-coded frames and the duplicating frames.

Dygart does not discuss the content of its video streams.

Weaver teaches a media stream that includes intra-codes frames as well as P-frames and B-frames - as illustrated by the FRAME TYPE field of column 8, lines 64-68.

Therefore - neither one of Dygart or Weaver, alone or in cousin, teaches all the features of claims 6 and 14 and for that reason alone the 35 U.S.C. § 103(a) rejection of claims 6 and 14 is traversed and claims 6 and 14 should be allowed.

ARGUMENTS FOR GROUND 5

Claims 8 and 18

Neither one of Dygart or Weaver, alone or in cousin, teaches of "*wherein an amount of duplicating frames to be transmitted between each pair of intra-coded frames determines a presentation rate of the non-live media stream*" – as recited in claims 8 and 18.

Neither one of Dygart and Weaver teaches or suggests of duplicating frames and especially does not teach or suggest of *an amount of duplicating frames to be transmitted between each pair of intra-coded frames determines a presentation rate of the non-live media stream*.

Dygart does not discuss the content of its video streams.

Weaver teaches a media stream that includes intra-codes frames as well as P-frames and B-frames - as illustrated by the FRAME TYPE field of column 8, lines 64-68.

Therefore - neither one of Dygart or Weaver, alone or in cousin, teaches all the features of claims 8 and 18 and for that reason alone the 35 U.S.C. § 103(a) rejection of claims 8 and 18 is traversed and claims 8 and 18 should be allowed.

Conclusion

In view of the foregoing amendments and remarks, Appellies assert that the pending claims are allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Board of Appeal have any question or comment as to the form, content or entry of this Appeal Brief, the Board of Appeal is requested to contact the undersigned at the telephone number below.

Respectfully submitted,

/OREN RECHES/

Oren Reches

Attorney/Agent for Applicant(s)

Registration No. 53,506

Dated: October 10 2011

Reches Patents

211 North Union Street, Suite 100

Alexandria, Virginia 22314

United States

Tel: (703) 838 5568

Fax: (703) 683 4707

CLAIMS APPENDIX

1. (Previously Presented) A method for providing media streams, the method comprising the steps of:

receiving live media streams at a first path, wherein the first path comprises a video pump coupled to a data acquisition unit;

providing a live media stream from the first path to a client, in response to a request to provide the live media stream to the client;

retrieving media related information that comprises data structures that assist in constructing non-live media streams;

online generating by the video pump, in response to a request to receive a trick play media stream, a non-live media stream, by utilizing the media related information, wherein the generating comprises fetching intra-coded frames from locations that are pointed to at the media related information, and altering timing information of the intra-coded frames and of duplicating frames; and

providing the non-live media stream from a second path to the client, wherein the second path comprises the video pump and a media server being coupled to each other by a network link that differs from a network link of the first path.

2. (Canceled).

3. (Previously Presented) The method of claim 1 comprising providing the live media stream to multiple users wherein the live media stream reaches the video pump only once.

4. (Previously Presented) The method of claim 1 wherein the media related information comprises information indicative of a location of a stored media stream and wherein the generating of a non-live media stream further comprises a determination of which frames of the stored media stream to fetch from the first path.

5. (Previously Presented) The method of claim 1 wherein the data structures comprise an indexing file that comprises a duplicating frame and locations of the intra-coded frames.

6. (Previously Presented) The method of claim 1 wherein the non-live media stream is a trick mode media stream and wherein the non-live media stream consists essentially of the intra-coded frames and the duplicating frames.

7. (Original) The method of claim 1 further comprising a step of providing a live media stream from the first path to a client, in response to a request to provide a slightly delayed media stream to the client.

8. (Previously Presented) The method of claim 1 wherein an amount of duplicating frames to be transmitted between each pair of intra-coded frames determines a presentation rate of the non-live media stream.

9. (Previously Presented) A system for providing media streams, the system comprising:

a first path comprising a video pump coupled to a data acquisition unit; wherein the first path is utilized for receiving live media streams and for providing a live media stream to a client, in response to a request to provide the live media stream to the client; and

a second path comprising the video pump and a media server being coupled to each other by a network link that differs from a network link of the first path; wherein the second path is operable to retrieve media related information that comprises data structures that assist in constructing non-live media streams; to online generate at least a portion of a non-live media stream in response to a request to provide the non-live media stream to the client, by utilizing the media related information, wherein the generating comprises fetching intra-coded frames from locations that are pointed to at the media related information, and altering timing information of the intra-coded frames and of duplicating frames; and to provide the non-live media stream to the client, in response to the request to provide the non-live media stream to the client.

10. (Canceled).

11. (Previously Presented) The system of claim 9 wherein the video pump is arranged to provide the live media stream to multiple users wherein the live media stream reaches the video pump only once.

12. (Previously Presented) The system of claim 9 wherein the first path comprises the video pump

13. (Previously Presented) The system of claim 9 wherein the data structures comprise an indexing file that comprises a duplicating frame and locations of the intra-coded frames.

14. (Previously Presented) The system of claim 9 wherein and wherein the non-live media stream consists essentially of the intra-coded frames and the duplicating frames.

15. (Original) The system of claim 9 wherein the first path is further operable to provide live media stream, in response to a request to provide a slightly delayed media stream to the client.

16. (Previously Presented) A system for providing media streams, the system comprising:

an acquisition unit coupled to a media source;

a media storage and management entity;

a video pump interface, coupled to the output of the acquisition unit via a first path, to the media storage and management entity via a second path and to a command channel, the video pump interface is operable to receive instructions/ requests from an end-user and accordingly to determine whether to feed the video pump with live stream media from the acquisition unit via the first path or to initiate a data fetch sequence for fetching data stored in the media storage and management entity, via the second path, in case where trick modes are required; wherein the second path comprises a network link that differs from a network link of the first path; and

a video pump that is operable to determine which data to fetch from the media storage and management entity and when to transmit it according to MPEG timing; wherein the video pump is arranged to provide the live media stream to multiple users wherein the live media stream reaches the video pump only once;

wherein the media storage and management entity is adapted to generate at least a portion of a non-live media stream in response to a request to provide the non-live media stream to a client.

17. (Previously Presented) The system of claim 16 wherein the video pump is operable to fetch selected portions of the data stored at the media storage and management entity, wherein video pump is arranged to fetch selected portions based on an indexing file that comprises a duplicating frame and locations of the intra-coded frames .

18. (Previously Presented) The system of claim 16 wherein an amount of duplicating frames to be transmitted between each pair of intra-coded frames determines a presentation rate of the non-live media stream.

19. (Previously Presented) A non-transitory computer readable medium having code embodied therein for causing an electronic device to perform the steps of:

receiving live media streams at a first path, wherein the first path comprises a video pump coupled to a data acquisition unit;

providing a live media stream from the first path to a client, in response to a request to provide the live media stream to the client;

retrieving media related information that comprises data structures that assist in constructing non-live media streams;

online generating by the video pump, in response to a request to receive a trick play media stream, a non-live media stream, by utilizing the media related information, wherein the generating comprises fetching intra-coded frames from locations that are pointed to at the media related information, and altering timing information of the intra-coded frames and of duplicating frames; and

providing the non-live media stream from a second path to the client, wherein the second path comprises the video pump and a media server being coupled to each other by a network link that differs from a network link of the first path.

20. (Previously Presented) The method of claim 1, wherein the generating comprises generating at least the portion of the non-live media stream by converting the live media stream to provide at least the portion of the non-live media stream.

21. (Previously Presented) The method of claim 1, wherein the receiving further comprises receiving a live media stream from a first media source, and wherein the retrieving

comprises retrieving media related information from a second media source that is different from the first media source.

22. (Previously Presented) The method of claim 3, further comprising storing non-live media streams at the video pump, providing a first portion of the non-live media stream from the video pump to the client, and providing a second portion of the non-live media stream from the media server, wherein the generating comprises generating the second portion of the non-live media stream.

23. (Previously Presented) The method of claim 8, wherein the converting comprises converting a live media stream to a non-live media stream that substantially includes intra coded frames of the live media stream and duplicating frames.

24. (Previously Presented) The system of claim 9, wherein the second path is further operable to generate at least the portion of the non-live media stream by converting the live media stream to provide at least the portion of the non-live media stream.

25. (Previously Presented) The system of claim 9, wherein the first path is operable to receive a live media stream from a first media source, and wherein the second path is further operable to retrieve media related information from a second media source that is different from the first media source.

26. (Previously Presented) The system of claim 16, wherein the video pump is further adapted to store non-live media streams, to provide a first portion of a non-live media stream that is stored at the video pump to the client, and to providing a second portion of the non-live media stream from the media storage and management entity, wherein the media storage and management entity is adapted to generate the second portion of the non-live media stream.

27. (Previously Presented) The system of claim 16, wherein the media storage and management entity is adapted to convert a live media stream to a non-live media stream that substantially includes the intra coded frames of at least a portion of the live media stream, and duplicating frames.

28. (Previously Presented) The method according to claim 1 wherein the first path comprises the video pump.

EVIDENCE APPENDIX

There is no information needed to be presented in this appendix.

RELATED PROCEEDINGS APPENDIX

There is no information needed to be presented in this appendix.